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BEFORE THE BOARD OF PATENT APPEALS AND INTERFERENCES

Application Number: 10/620,354
Filing Date: July 17, 2003
Appellant(s): OHSHITA ET AL.

Murat Ozgu
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 6/04/2007 appealing from the Office action mailed 1/05/2007.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,628,067	**KOBAYASHI ET AL.**	**9-2003**
6,498,592	**MATTHIES**	**12-2002**

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

Claims 4-8 and 10-16 are rejected under 35 U.S.C. 103(a) as being unpatentable over Ogura et al. (US 2002/0070663 A1) in view of Kobayashi et al. (US 6,628,067), and further in view of Matthies (US 6,498,592).

Regarding claims 4 and 13-16, Ogura et al. teach an organic electroluminescent display device comprising a plurality of pixels located above a substrate (1001), wherein each pixel is formed by two light emitting elements producing only two different colors of predetermined chromaticity values (Figure 9 shows three different colors per pixel, but paragraph 0168 states that two colors instead of three colors may be used), wherein each light-emitting element is formed by interposing a luminescent layer (1004) containing organic electroluminescent materials between a pair of electrodes (1002, 1006), and at least one of the pair of electrodes comprises a plurality of independent array patterns to the light-emitting elements (see for

example, Fig. 6 and paragraphs 0166-0168). Ogura teaches the different colors being, for example, blue and yellow (paragraph 0168). It is noted that Ogura does not specifically state that the two different colors are mixed to produce a white color.

However, Kobayashi teaches blue and yellow organic light emitting elements having different emissive areas and used in combination to form an organic EL white light source that has CIE coordinates of (0.33, 0.35) (see for example col. 9, line 62 – col. 10, line 59). Accordingly, it would have been obvious to one of ordinary skill in the art at the time the invention was made to provide the two light-emitting elements emitting blue and yellow light, having different emissive areas so that they can be operated at the same time to produce a white light source having an excellent CIE value. The mixture of blue and yellow light will inherently produce a white color falling within a line segment between the blue and yellow colors in a CIExy chromaticity diagram. The recitation "by controlling each gradation of the two light-emitting elements" has not been given patentable weight because is considered an intended used recitation. It has been held that a recitation with respect to the manner in which a claimed apparatus is intended to be employed does not differentiate the claimed apparatus from a prior art apparatus satisfying the claimed structural limitations. *Ex parte Masham*, 2 USPQ 2d 1647 (1987). Furthermore, the necessary step of choosing a blue color and yellow color for the display meets the recitation of "controlling a gradation of the two light-emitting elements," since choosing a certain type of organic EL material for the two different colors in effect translates to controlling the gradation of the two elements.

Ogura et al. and Kobayashi do not specifically teach the different colors being driven by a different current or different voltages. However, Matthies teaches an organic electroluminescent

display device comprising a plurality of light emitting elements formed of different color light-emitting films driven by different currents and voltages from each other. Matthies teaches a color correction circuitry adapted to individually control the current passing through each region to correct for any differential aging of regions (col. 11, lines 1-40). The least efficient region is provided with the largest current since current is directly proportional to the intensity of the light emitted. Accordingly, it would have been obvious at the time the invention was made to include a color correction circuitry so that individual regions can be calibrated to display brightness levels which are consistent across the entire dynamic range of the display.

Regarding claim 6, Ogura teaches doping (coupling with a foreign material) the light emitting layers (for example, see paragraph 0073).

Regarding claim 7, the functional language, "said chromaticity values of two colors are controlled by changing thickness of said light emitting film" has not been given patentable weight because it is narrative in form. In order to be given patentable weight, a functional recitation must be expressed as a "means" for performing the specified function, as set forth in 35 U.S.C. § 112, 6th paragraph, and must be supported by recitation in the claim of sufficient structure to warrant the presence of the functional language. *In re Fuller*, 1929 C.D. 172: 388 O.G. 279.

Claim 8 is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Therefore, it is the position of the examiner that it

would have been obvious to one of ordinary skill in the art that the OLED disclosed by Ogura et al. is at least a fully functional equivalent to the Applicant's claimed OLED as evidenced by Ogura's suggestion of all of the Applicant's claimed structural limitations.

Claim 12 is drawn to a process of manufacturing which is incidental to the claimed apparatus. It is well established that a claimed apparatus cannot be distinguished over the prior art by a process limitation. Consequently, absent a showing of an unobvious difference between the claimed product and the prior art, the subject product-by-process claim limitation is not afforded patentable weight (see MPEP 2113). Therefore, it is the position of the examiner that it would have been obvious to one of ordinary skill in the art that the OLED disclosed by Ogura et al. is at least a fully functional equivalent to the Applicant's claimed OLED as evidenced by Ogura's suggestion of all of the Applicant's claimed structural limitations. Furthermore, Ogura et al. teach the EL layer being formed by a printing method (for example, see paragraph 0054).

Regarding claim 5, Ogura teaches that organic electroluminescent layers emitting colors other than red, green, and blue may be used in the EL device. Ogura does not specifically recite white as one of the colors used in the device. However, the existence of white color organic electroluminescent materials and their use is well known in the art. It is noted that the applicant's specific use of the color white as one of the two different colors, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. It is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to select any two colors based on the desired colors of the display.

Regarding claims 10-11, Ogura, Kobayashi, and Matthies teach the use of different colored organic EL layers and do not specifically teach the use of a single color EL layer with

the use of a color filter or color conversion filter. However, three main groups of EL devices used as color displays, including the use of separate colored EL layers, the use of a single white EL layer used with color filters, and the use of a single blue EL layer with color conversion filters (CCM) are well known in the art. It is noted that the applicant's specific use of color filters or color conversion filters for producing the two different colors in the light-emitting elements, does not solve any of the stated problems or yield any unexpected result that is not within the scope of the teachings applied. It is considered to be a matter of choice, which a person of ordinary skill in the art would have found obvious to use any type of configuration (different EL layers, white EL layer with color filters, or blue EL layer with color conversion filters) for producing the two differently colored light-emitting elements, since the selection of any of these art recognized equivalents would be within the level of ordinary skill in the art.

(10) Response to Argument

Regarding the Appellant's argument that the combination of Ogura, Kobayashi, and Matthies fails to teach every limitation of independent claim 16, the examiner disagrees. Specifically, the Appellant argues that Ogura does not teach at least one of the electrodes including a plurality of independent array patterns. Ogura shows an active matrix (having independent array patterned electrodes) display in figure 6. Furthermore, Ogura clearly teaches that the invention can be applied to both active and passive matrix EL panels (for example, see paragraphs 0009 and 0056).

The examiner does not understand the Appellant's argument that Kobayashi does not teach a mixture of two colors producing a color falling within a circular area of a 0.1 radius with a center in a pure white coordinate of 0.31, 0.36 in the CIE xy chromaticity diagram. Kobayashi

clearly teaches mixing a blue colored light produced by a first luminous material and a yellow colored light produced by a second luminous material to produce a white colored light having a coordinate of 0.33, 0.35 in the CIE xy chromaticity diagram (for example, see col. 10, lines 45-55). Such a white color not only falls within the claimed circular area (having a radius of 0.1), but also falls within a circular area having a radius of 0.02 and a center point of 0.31, 0.36. In case the Appelant is arguing that Kobayashi does not teach a mixture of two colors falling within a line segment between the two colors, the examiner notes that it is inherent that if one chooses any two points on the chromaticity diagram (any two colors), then all colors that are formed by mixing these two colors lie between the two points on a straight line connecting them, as can easily be found in numerous text books and other resources covering the basics of the CIE xy chromaticity diagram, including Wikipedia (http://en.wikipedia.org/wiki/CIE_1931_color_space). Accordingly, the white light produced by mixing the blue light and yellow light falls along a line segment between the two points and within a circular area having a center point of 0.31, 0.36 in the CIE xy chromaticity diagram.

Regarding the Matthies reference, the examiner notes that Matthies clearly teaches driving light-emitting elements by different currents so as to maintain the brightness of the elements throughout the lifetime of the display device (for example, see col. 11, lines 1-61). Matthies also states that the currents will vary for different OLED materials (different colored light-emitting elements, such as blue and yellow) (for example, see col. 11, line 35-37).

(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.

Respectfully submitted,

Anthony Perry

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